



جامعة صنعاء
كلية الطب والعلوم الصحية
دفعة بصمة طبيب 31
طب بشري

Lecture No. 19

ophthalmology

OCULAR MANIFESTATION OF SYSTEMIC
DISEASES

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VISIT...

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Ocular Manifestation of systemic disease ☺

1) Diabetes:-

can affect any part of the eye

*1) Diabetic Retinopathy ☺

- Diabetes is a Metabolic Microvascular disease, so it affect the eye by two Mechanisms:-

1) on vessels wall

2) on Blood stream itself

1) DM affect blood vessels wall:-

- DM → weakness of B.v wall → loss of vascular muscles
- leakage of RBCs → (Clot and dot haemorrhage) ①
- lipoprotein → engulfed by retinal macrophag
- (Hard exudate) ② on Fundus.
- Leakage of plasma → (Macular oedema) ③

2) DM affect blood stream itself:-

- Hyperglycemia → Hyper viscosity
- hypoxia in blood stream of retina → aggregation of platelets → Blockage:-
- 1) → Neovascularization (nv disk, nv iris, nv else where) ①

[2] → Ischemia of retinal axons → (cotton wool spot) ② soft exudate

[3] → vascular change → rupture easy → (vitreous hemorrhage) ③ → if Fibrosis Formation around the vessels → (Tractional retinal detachment) ④

5 → The new blood vessels on iris can do occlusion of anterior chamber angle → (neovascular Glaucoma) ⑤

* Signs of Diabetes:-

- 1- pre-senil cataract.
- 2- neovascular Glaucoma, optic atrophy.
- 3- cranial nerve palsy → most common in oculomotor and abducens nerves.

* Classification of diabetic retinopathy ^

Non-proliferative
→ no neovascularization

proliferative.
- neovascularization
"Blindness stage"

N.B:- The most common cause of decrease vision in Diabetes pt is **Macular oedema**.



*** Types of Macular oedema:-**

- [1] Exudative macular oedema. → hard exudate.
- [2] oedematous macular oedema → only Fluid without hard exudate.
- [3] Cystoid macular oedema CMO.
- [4] Ischemic macular oedema. → The worst type.

*** Hypertensive Retinopathy** ^^

* The most common cause is "Retinal vein occlusion"

→ HTN → Arterio sclerosis → lack of Flexibility of wall → venous congestion → vein occlusion.

→ Constriction of veins of arterial Crossing.

→ I HTN crisis pt has → (Retinal oedema) Macular star*, exudate, haemorrhage. "Cotton wool"

*** N.B:-** Exam the Fundus by:-

1-Direct ophthalmoscope.

2-Indirect

3-slit lamp



* vitamin A def. Ocular manifestations

* Thyroid disorders :- ^

(5) Signs :-

- 1- Soft tissue involvement.
- 2- Eyelid retraction. 50%.
- 3- proptosis
- 4- optic neuropathy.
- 5- Restrictive myopathy 40%.

Infective Diseases :- ^

[1] HIV :-

- 1- The most common sign is "cotton wool spots"
- 2- Multiple molluscum contagiosum.
- 3- Kaposi's sarcoma.

[2] Rubella (congenital) :-

N:B:- Type of Hypopyon :-

- 1- Sterile (pseudo-hypopyon)
- 2- Infected hypopyon.
- 3- Inverted hypopyon → in upper part. as in "post operative Retinal detachment. pt"

[3] Tuberculosis

Optic Nerve... 😊

Q₁ :- How many cranial nerves in human body?

are 12 pairs of cranial nerve.

The 4 parts of optic Nerve are :-

- 1-intraocular → see in the Fundus → optic disk.
- 2-intra orbital.
- 3-intra canalicular.
- 4-intra cranial.

* Three 3 golden markers see optic Disk (3C) :-

- 1-Color
- 2-Cup
- 3-Contour (margin)

* normal color of optic disk is yellow.

- can be pale in color in cause :- Trauma, Ischemia --
- can be hyper redish in cause :- ↑ ICP
- papilloedema.
- also can be white or Black in color.

The optic cup is :- central depression in the optic disk.

- * it is empty space, not contain axons
- * has a diameter 0,5 mm.

Optic Neuritis ... ^^

Q :- what are the systemic disease, that can cause optic neuritis ??

→ MS (Multiple sclerosis)

* The commonest ophthalmic feature seen in MS by MRI is :-

* The periventricular calcified whitish plaques.
792 up

Optic Neuritis ... ^^

* Acute :-

- 1- papillitis
- 2- Retro-bulbar neuritis

chronic

"Toxic amblyopia"

* Cause :- (1)

Female pt, is 40 years old, slightly obese, not pregnant, The VIA 6/6.

- by Fundus exam → she has papill edema
- normal Brain CT.

* What could be the cause?

is pseudotumor Cerebri.

↳ is Benign intracranial hypertension.

* Cause (2) :-

pt has Anterior optic neuritis, VIA 6/60 has color defect.
in MRI show → periventricular calcified plaque.

→ most probably is MS.

Q :- why pediatric doctors refer the child with meningitis to ophthalmologist?

To detect if there is papilledema, because they want to do lumbar puncture (LP) to analyse CSF, and to prevent central herniation.

N.B :- Types of cupping :-

1 - Glaucomatous cupping

2 - physiological cupping

3 - Neurological cupping → due to Brain Tumor

* The most common type of cupping is physiological.

* signs of papilloedema :-

- 1- Hyperemia (redish color)
- 2- Loss contour (elevation ~~my my~~ margin)
- 3- absent of optic cup.

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